Bulletin 800Z
Zero-Force™ Touch Buttons

Zero-Force™ Touch Buttons
A World-Class Design

As part of the continuing commitment to offer customers world-class products and superior value-added services and expertise, Rockwell Automation introduces the Allen-Bradley Zero-Force™ Touch Button line of operator interface devices.

Designed to help alleviate concerns about ergonomics and safety, the revolutionary Zero-Force Touch Button is the first operator interface device of its type to incorporate Field-Effect sensing and microprocessor technology. Unlike traditional push buttons, Zero-Force Touch Buttons do not require pressure to activate the button. Instead, sensors register an operator's touch, converting that touch into an electrical output that initiates operation. Through its exclusive industry offering, Rockwell Automation now provides solutions for both general purpose and heavy industrial applications that meet global CE and $_cUL_{us}$ requirements.
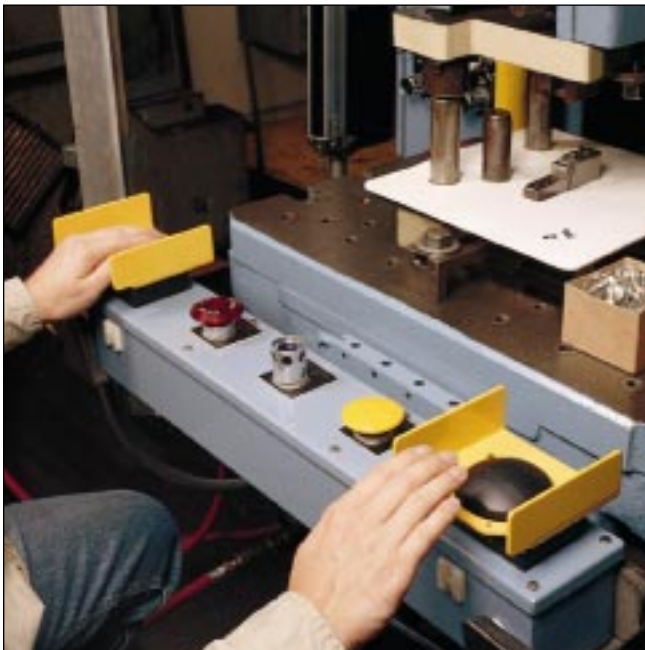
# General Purpose Zero-Force™ Touch Buttons

30.5mm

22.5mm

- Ergonomically crafted for today's repetitive motions, offering unmatched control reliability in a compact and aesthetically pleasing solution.

- Unique Field-Effect sensing technology that distinguishes between the human touch and most foreign objects.

- Features quick disconnect or cabled device wiring options.

- Exclusive self diagnostic circuitry coupled to the fault LED indicator provides a safer, more reliable solution.

- Relay output via a mechanically-linked 1 N.O. and 1 N.C. circuit. (Optional isolated commons are available.)

- Available in a 30.5mm mounting and – an industry first – a 22.5mm mounting.

- Another industry first – 1200psi hose down capability. Ingress Protection: IP66, Type 4/4X/13.

Heavy Industrial Zero-Force™ Touch Buttons

- Specifically designed for heavier industrial applications that typically require two-hand control compatibility with $_cUL_{US}$, CE, ANSI and OSHA regulations.

- Largest contoured touch surface for easy access.

- A direct replacement that can be mounted onto the 800P style enclosure or flush mounted onto a customized configuration.

- Features a unique replaceable plug-in style output relay which reduces down time and increases the product's life cycle.

- This is the first heavy industrial touch button that is $_cUL_{US}$ listed and CE marked.

- Zero-Force Touch Buttons are sealed to prevent outside elements from contaminating the internal circuitry. Ingress Protection: IP66, Type 4/13.
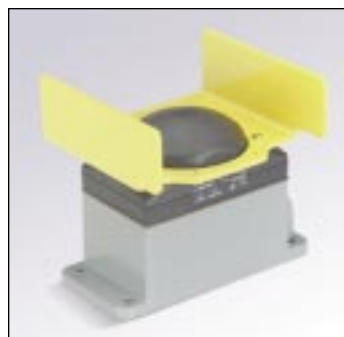
Replacing an electromechanical palm button with an 800Z heavy industrial touch button is easy. Simply retrofit directly to existing 800P base or other FX type base and reuse the 800P yellow guard.
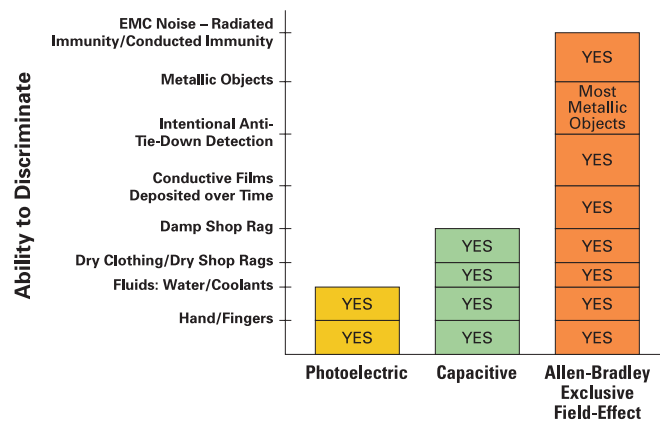
The Shape of Touch Button Technology

Designed for Today's Ergonomic Work Environment

- The 800Z Zero-Force Touch Button has a unique curved surface designed to fit the shape of the hand.

- There is never a need to rotate hands in order to operate, making repeated actions easier to perform.

- The user-friendly 800Z can be mounted in any orientation, helping to alleviate the effects of Carpal Tunnel Syndrome and other nerve disorders common to repetitive operator interfaces.

How the Zero-Force Touch Button Works

Independent, control-reliable sensors convert a touch into an electrical output that initiates operation when hands or fingers are placed onto the contoured surface. The precise sensor timing combined with microprocessor-based Field-Effect technology gives Zero-Force Touch Buttons the ability to discriminate between a person's touch and most environmental substances.

Ability to Discriminate (y-axis, top to bottom):
EMC Noise – Radiated Immunity/Conducted Immunity
Metallic Objects
Intentional Anti-Tie-Down Detection
Conductive Films Deposited over Time
Damp Shop Rag
Dry Clothing/Dry Shop Rags
Fluids: Water/Coolants
Hand/Fingers

Photoelectric	Capacitive	Allen-Bradley Exclusive Field-Effect
		YES
		Most Metallic Objects
		YES
		YES
	YES	YES
	YES	YES
YES	YES	YES
YES	YES	YES

About Field-Effect Sensing Technology

Rockwell Automation has introduced Sense-A-Touch™ Field-Effect technology into the 800Z design. This patented technology gives the 800Z the ability to distinguish the difference between a person's hand and most solid substances as well as resistance to accidental activation by clothing, fluid films and splashes.

Field-Effect technology makes Zero-Force Touch Buttons a superior choice over capacitive and photoelectric sensors – especially in environments where electrical noise, metal shavings, shop rags and dust are prevalent. Field-Effect sensors operate at a significantly lower impedance. They have a higher signal-to-noise ratio, increasing the 800Z's resistance to electromagnetic interference and electrical noise within industrial environments.

Rockwell Automation is the first to use Field-Effect technology in touch button design.

Outstanding Features

Replaceable Output Relay

If the Heavy Industrial Touch Button relay ever fails, simply replace the relay, rather than the entire button.
Replaceable relays:
• help increase the life of your Heavy Industrial Touch Button
• reduce production downtime
• offer a cost savings advantage

Rated for International Markets

Rockwell Automation is the first to offer both a General Purpose line and a Heavy Industrial line of touch buttons designed to meet the needs of global industrial markets. It is the exclusive manufacturer of the 22.5mm mounted General Purpose button and offers the first Heavy Industrial buttons designed to comply with international standards for global sales ($_cUL_{US}$ listed, CE marked).

Input voltages are available in two ranges to meet international requirements and help reduce inventory:
• Low Voltage: 10-50V DC and 20-40V AC
• Full Voltage: 90-264V AC
The mechanically-linked output relay (1 N.O. and 1 N.C.) complies with EN574, OSHA and ANSI two-hand control standards.

Reliability is Built into Every Zero-Force Touch Button

The 800Z is built to last:
• redundant sensors are used which require simultaneous activation and re-initiation of both sensors

• housing materials are resistant to chemicals

• after assembly, functional testing make the 800Z a reliably superior product choice

Five-Pin Mini-QD Connection Choices

The General Purpose line offers the choice of a 6′, 12′, or 24′ (1.8m, 3.6m, or 7.2m) cabled device or a quick disconnect version (five-pin Mini-QD). When choosing a quick disconnect cable, both a high quality straight cable and a right angle cable for those tight, hard-to-reach applications are optional. The wiring for the heavy industrial design is connected to a IP2X finger-safe terminal block.

Optional Protective Guards

Protective guards are optional in both lines. General Purpose Touch Buttons are available with guards in four colors (black, green, red or yellow), and a heavy duty metal yellow guard is available for the Heavy Industrial Touch Buttons.

Designed for Safety

Self-Diagnostic Fault LEDs

Zero-Force LEDs are clearly labeled, providing visual feedback to the operator as to Power, Run and Fault conditions of the touch button and environment.

The 800Z Zero-Force is uniquely intelligent. It is designed to detect several potentially dangerous conditions within an operator's region, shut itself off first and then flash an appropriate fault signal. This is an industry first! The Zero-Force is designed to protect the operator from the following conditions:

- Code 2 (Power-Up Safety): If the device is touched during power-up, the Fault LED will flash a code and the microprocessor will disable the output. The device will resume operation ten seconds after it is no longer touched.

- Code 3 (Tie Down Protection): If a wet rag, for example, touches the device during operation and remains in contact with the device after the operator removes his/her hand, the device will be disabled first and then the Fault LED will flash a code until the object is removed.

- Code 4 (Margin Detection): If conductive films deposit on the sensor surface over a period of time, no false output can be triggered. The margin detection system will disable the device first, and then the Fault LED will flash until the contamination is cleaned off of the sensor surfaces.

Fault LED Flash Sequence

CODE TYPE	DESCRIPTION	FLASH SEQUENCE
Code 2	Power-Up Safety	•• •• ••
Code 3	Tie-Down Protection	••• ••• •••
Code 4	Margin Detection	•••• •••• ••••

Two-Hand Control Applications

The 800Z Touch Button line can be part of a global Two-Hand Control system. It is uniquely designed to comply with global standards (CE marked and $_cUL_{US}$ listed).

800Z buttons are designed to function in a control reliable mode – in the event of a single fault, the device will not lead to the loss of the safety function. The 800Z has passed stringent EMC (Electro Magnetic Compatibility) European Norm[1] tests. Both General Purpose and Heavy Industrial lines will function within a system comprised of a set of touch buttons and a safety relay to be compatible with ANSI B11.19, OSHA 1910.217 and EN 574.

[1](EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN55011)

Bulletin 800Z Zero-Force™ Touch Buttons

IEC and NEMA Style

General Purpose Line

Heavy Industrial Line

**Types
4/4X/13 and 4/13
IP66**

**Internationally Rated
Ergonomic
Touch Buttons**

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Technical Data

Mechanical Ratings		
Description	**General Purpose Line (800Z-G)**	**Heavy Industrial Line (800Z-H)**
Vibration	10 to 55 Hz; 1.50 mm (0.06 in.)	
Mechanical Shock	100 G (Mechanical Durability)	
Degree of Protection	Type 4/4X/13 IP66 1200 psi Washdown	Type 4/13 IP 66
Mechanical Design Life (Typical)	50,000,000 cycles minimum	
Operating Force	zero (slight pressure may be required if thick gloves are used)	

Environmental		
Temperature Range (Operating)	23°F to 122°F (-5°C to 50°C)	
Temperature Range (Storage)	-40°F to 185°F (-40°C to 85°C)	
Humidity	95% RH from 25°C to 50°C full operation	

Materials		
Upper & Lower Housing	Valox 357	
Guard	Valox 325	
Gasket	BUNA-N	1/16" Cork-BUNA-N

Agency Approvals		
Approvals	cULus, CE	
Standards Conformity	UL508, UL50, EN55011, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN60947-5-1	

Electrical Ratings		
Input Voltage: 800Z-GL... **800Z-HL...**	Low Voltage 10-50V DC and 20-40V AC at 50/60 Hz	
Input Voltage: 800Z-GF... **800Z-HF...**	Full Voltage 90-264V AC at 50/60 Hz	
Electrical Design Life	Relay Output: 150,000 Cycles Min.	Relay Output: 150,000 Cycles Min.
Terminal Block Specifications	N/A	IP2X rated Terminal Block Max. wire size #12-22 AWG (0.5-4 mm^2) Tightening Torque: 0.74 ft-lb (1 Nm)
Current Draw	35 mA at 12V DC 60 mA at 24V DC 40 mA rms at 120V AC 80 mA rms at 240V AC	45 mA at 12V DC 70 mA at 24V DC 50 mA rms at 120V AC 90 mA rms at 240V AC

Output Relay Ratings							
	Type	**Utilization Category**	**Ith**	**Volts**	**24V**	**120V**	**240V**
General Purpose Line	30.5 mm	B300, AC-15	5	Amps	5	3	1.5
	22.5 mm	C300, AC-15	2.5	Amps	2.5	1.5	0.75
	All	Resistive, AC-13	2 A maximum at 24V DC				
Heavy Industrial Line		B300, AC-15	5	Amps	5	3	1.5
		Resistive, AC-13	2 A maximum at 24V DC				

Cable Specifications

Electrical Ratings			
Style		**General Purpose 22.5 mm Line**	**General Purpose 30.5 mm Line**
Cabled Devices	Cabled Options	5 wire (single common), or 6 wire (isolated common) 105°C, 300V multiconductor cable	5 wire (single common), or 6 wire (isolated common) 105°C, 300V multiconductor cable
	Wire Termination	Window stripped — individual wires	Window stripped — individual wires
5 Pin QD Cables	Cable Lengths	2m, 5m, 10m	6ft, 12ft, 20ft
	Wire Size	0.5 mm^2 (22 AWG)	18 AWG (0.75 mm^2)
	Wire Termination	Blunt Cut	

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General Purpose Line — Momentary Touch Buttons

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800Z-GL2Q5

800Z-GF3Q5B

Mounting Hole Size	Input Voltage Range and Output Type	Electrical Connection	No Guard		Black Guard	
			Cat. No.	✻	Cat. No.	✻
22.5 mm Mounting Hole	10-50V DC & 20-40V AC Input Relay Output	5 Pin QD	800Z-GL2Q5		800Z-GL2Q5B	
		1.8m Cabled❶	800Z-GL2065		800Z-GL2065B	
		3.6m Cabled❶	800Z-GL2125		800Z-GL2125B	
		7.2m Cabled❶	800Z-GL2245		800Z-GL2245B	
	90-264V AC Input Relay Output	5 Pin QD	800Z-GF2Q5		800Z-GF2Q5B	
		1.8m Cabled❶	800Z-GF2065		800Z-GF2065B	
		3.6m Cabled❶	800Z-GF2125		800Z-GF2125B	
		7.2m Cabled❶	800Z-GF2245		800Z-GF2245B	
30.5 mm Mounting Hole	10-50V DC & 20-40V AC Input Relay Output	5 Pin QD	800Z-GL3Q5		800Z-GL3Q5B	
		6 ft. Cabled❶	800Z-GL3065		800Z-GL3065B	
		12 ft. Cabled❶	800Z-GL3125		800Z-GL3125B	
		24 ft. Cabled❶	800Z-GL3245		800Z-GL3245B	
	90-264V AC Input Relay Output	5 Pin QD	800Z-GF3Q5		800Z-GF3Q5B	
		6 ft. Cabled❶	800Z-GF3065		800Z-GF3065B	
		12 ft. Cabled❶	800Z-GF3125		800Z-GF3125B	
		24 ft. Cabled❶	800Z-GF3245		800Z-GF3245B	

❶ This device has a single common wire. If isolated commons are desired, replace the "5" in the Cat. No. with a "6". See Wiring Diagrams on page 15 for details.

General Purpose LIne — Momentary Touch Buttons

$$800Z - G \quad \underset{a}{L} \quad \underset{b}{3} \quad \underset{c}{065} \quad \underset{d}{B}$$

a

Input Voltage and Output Type

Code	Description	✱
L	Input: 10-50V DC and 20-40V AC Output: Relay	
F	Input: 90-264V AC Output: Relay	

b

Mounting Hole Size

Code	Description	✱
2	22.5 mm	
3	30.5 mm	

c

Electrical Connection

Code	Description	✱
Relay Output❶		
Q5	5 Pin QD	
065	6 ft. (1.8m) Cabled	
125	12 ft. (3.6m) Cabled	
245	24 ft. (7.2m) Cabled	
Relay Output — Isolated Commons❷		
066	6 ft. (1.8m) Cabled	
126	12 ft. (3.6m) Cabled	
246	24 ft. (7.2m) Cabled	

d

Guard Option

Code	Description	✱
Blank	No Guard	
B	Black Guard	
G	Green Guard	
R	Red Guard	
Y	Yellow Guard	

❶ These devices have a 1 N.O. and 1 N.C. mechanically-linked relay output with one common wire. See Wiring Diagrams on page 15 for details.

❷ These devices have a 1 N.O. and 1 N.C. mechanically-linked relay output with isolated commons. See Wiring Diagrams on page 15 for details.

✱ **Prices – Consult Sales Office or price list**

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Heavy Industrial Line — Momentary Touch Buttons

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800Z-HF1
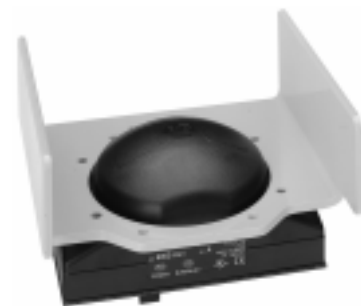
800Z-HF1M

Mounting Style	Input Voltage Range and Output Type	Electrical Connection	No Guard		Yellow Guard	
			Cat. No.	✳	Cat. No.	✳
Flush Mount	10–50V DC & 20–40V AC Input Relay Output	Terminal Block	800Z-HL1		800Z-HL1M	
	90–264V AC Input Relay Output	Terminal Block	800Z-HF1		800Z-HF1M	

800Z – H L 1 M

a   b   c

a

Voltage		
Code	Description	✳
L	Input: 10–50V DC & 20–40V AC Output: Relay	
F	Input: 90–264V AC Output: Relay	

b

Mounting Type/Connection❶		
Code	Description	✳
1	Flush Mounting/Terminal Block	

c

Guard Option		
Code	Description	✳
Blank	No Guard	
M	Yellow Metal Guard	

❶ Heavy industrial devices have a 6 position terminal block connection, which includes isolated commons and a 2 N.O. + 2 N.C. mechanically-linked relay output in series. See Wiring Diagrams on page 15 for details.

Quick Disconnect Cables
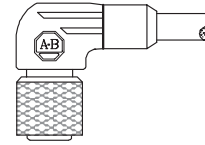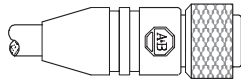
22.5 mm Mounting Hole	
Length	**5 Pin Straight QD Cable (Micro)**
	Cat. No.
2 m	889D-F5AC-2
5 m	889D-F5AC-5
10 m	889D-F5AC-10

30.5 mm Mounting Hole		
Length	**5 Pin Straight QD Cable (Mini)**	**5 Pin Right Angle QD Cable (Mini)**
	Cat. No.	**Cat. No.**
6 ft.	889N-F5AE-6F	889N-R5AE-6F
12 ft.	889N-F5AE-12F	889N-R5AE-12F
20 ft.	889N-F5AE-20F	889N-R5AE-20F

Accessories for the General Purpose Line

General Accessories

Guards	Description	Color	Cat. No.	∗
Guards	These guards prevent accidental activation of the touch button surface and protect it from damage. To be used for both the 22.5 mm and 30.5 mm mounting.	Yellow	800Z-G3AG1	
		Black	800Z-G3AG2	
		Green	800Z-G3AG3	
		Red	800Z-G3AG4	

Mounting Rings	Description	Type	Cat. No.	∗
Mounting Ring Nut for 22.5 mm Holes *Plastic Mounting Kit* *Cat. No. 800Z-G2AH1*	Used on 22.5 mm devices.	Plastic	800Z-G2AH1	
Mounting Ring Nut for 30.5 mm Holes *Plastic Mounting Kit* *Metal Mounting Kit* *Cat. No. 800Z-G3AH1* *Cat. No.800Z-G3AH2*	Used on 30.5 mm devices.	Plastic	800Z-G3AH1	
		Metal	800Z-G3AH2	

Swivel/Tilt Mounting Assembly	Description	Size	Cat. No.	∗
30.5 mm Swivel/Tilt Mounting Assembly *Swivel Assembly* *Cat. No. 60-2439*	This bracket allows you to orient the Touch Button in any position. It can be mounted on any vertical or horizontal surface. Compatible with 30.5 mm mounting only.	2.25" (57 mm) Extension	60-2681	
		1.15" (29 mm) Extension	60-2439	

Adapter	Description	Type	Cat. No.	∗
30.5 mm to 22.5 mm Hole Size Adapter	This adapter allows a 22.5 mm Push Button operator to be installed in a panel with existing 30.5 mm mounting holes.	Shiny Metal	800E-AHA1	
		Black Metal	800E-AHA2	

Accessories for the Heavy Industrial Line

General Accessories

Replaceable Output Relay	Description	Input Voltage	Cat. No.	∗
 Replaceable Output Relay Cat. No. 800Z-N10, 800Z-N11	These replaceable output relays are used if the current output relay fails. For use with 800Z-HL devices.	Low Voltage 10-50V DC and 20–40V AC	800Z-N10	
	These replaceable output relays are used if the current output relay fails. For use with 800Z-HF devices.	Full Voltage 90–264V AC	800Z-N11	

Guard	Description	Color	Cat. No.	∗
 Guard Cat. No. 800Z-HAG1	This guard prevents accidental activation of the touch surface and protects it from damage. Longer mounting screws are included. **Note: Guards are required in most two hand safety applications (See applicable standards).**	Yellow	800Z-HAG1	

Bases	Description	Style	Cat. No.	∗
 Single Hub Base Cat. No. 800P-B1 *Ddouble Hub Base Cat. No. 800P-B2*	The Heavy Industrial Line products mount directly on these bases. The conduit hub(s) come with a $^3/_4$" opening.	Single Hub	800P-B1	
		Double Hub	800P-B2	

Legend Plates	Description	Marking	Cat. No.	∗
 Legend Plates	These legend plates can be mounted onto the yellow guard. Each legend plate includes two mounting screws.	Blank (Gray)	800P-X107	
		Blank (Red)	800P-X129	
		START	800P-X130	
		STOP	800P-X131	
		INCH	800P-X132	
		RUN	800P-X133	
		RUN INCH	800P-X134	
		TOP-STOP	800P-X135	

Mounting Screws	Description		Cat. No.	∗
 Cat. No. 800Z-HAH1	These replacement screws are the proper length to mount the Heavy Industrial Touch Button with metal guard to a 800P-B1 or 800P-B2 base, or a custom mounting surface.		800Z-HAH1	

| Adapter	Description		Cat. No.	∗
	This adapter is used if mounting Touch Button onto a 4-1/2" x 2-3/8" (114.3 x 60.3 mm) enclosure pattern.		800P-N150	

Wiring Diagrams

General Purpose Line

Electrical Connections: **10-50V DC and 20-40V AC Input Voltage (Relay Output)**
90-264V AC Input Voltage (Relay Output)

Note: Utilizes one mechanically-linked output relay (1 N.O. + 1 N.C.).

5 Conductor Cabled
(Relay Output)
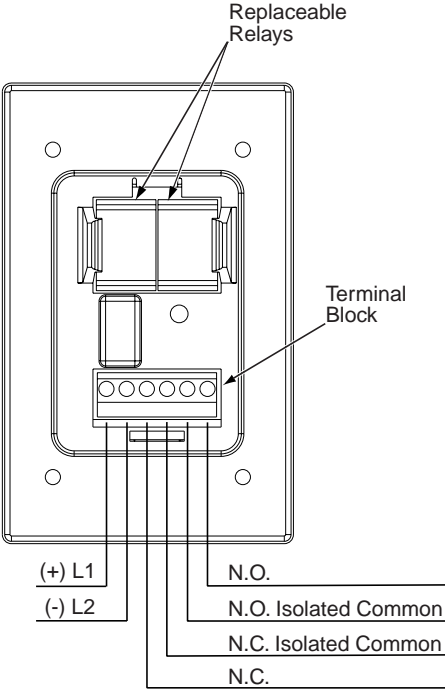**For 800Z-GL_ _ _5 Models**
For 800Z-GF_ _ _5 Models

BROWN (+) L1
BLUE (-) L2
BLACK (N.O.)
WHITE (N.C.)
GRAY (COMMON)
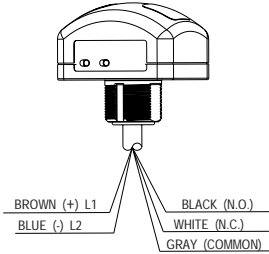
6 Conductor Cabled
(Isolated Common Relay Output)
For 800Z-GL_ _ _6 Models
For 800Z-GF_ _ _6 Models

BROWN (+) L1
BLUE (-) L2
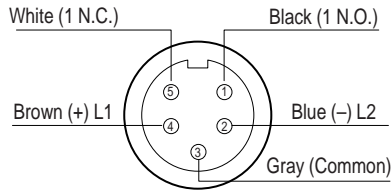BLACK (N.O.)
WHITE (N.C.)
GRAY (COMMON N.O.)
PINK (COMMON N.C.)
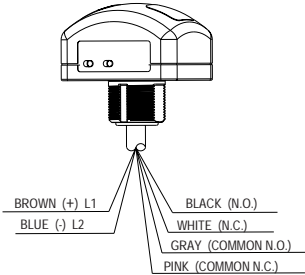
Heavy Industrial Line

Note: Utilizes two replacable mechanically-linked output relays (each has a 1 N.O. + 1 N.C. circuit) internally connected is series for a total of 2 N.O. + 2 N.C. contacts.
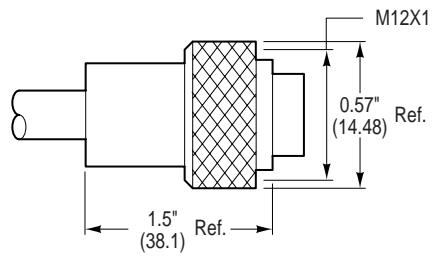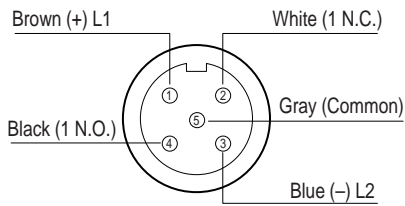
Replaceable
Relays

Terminal
Block

(+) L1
(-) L2
N.O.
N.O. Isolated Common
N.C. Isolated Common
N.C.

Wiring Diagrams

5 Pin Mini Quick Disconnect Version (for 30.5 mm Mounting)

White (1 N.C.)   Black (1 N.O.)

Brown (+) L1   Blue (−) L2

Gray (Common)

⑤ ① ④ ② ③

7/8 -16 UN-2B

1.00"
(25.4)   Ref.

1.67"
(42.5)
Ref.

White (1 N.C.)   Black (1 N.O.)

Brown (+) L1   Blue (−) L2

Gray (Common)

⑤ ① ④ ② ③

Ref.
1.00"
(25.4)

1.67"
(42.5)   Ref.
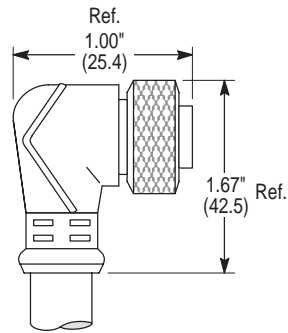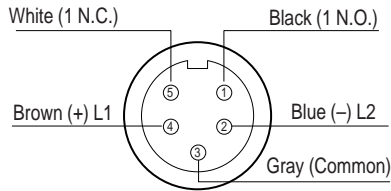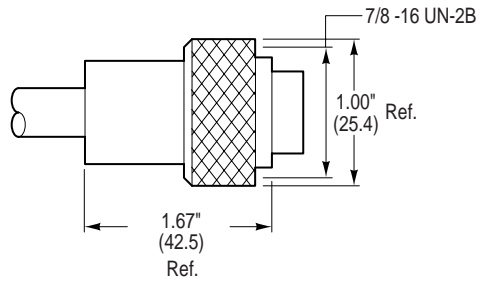
5 Pin Micro Quick Disconnect Version (for 22.5 mm Mounting)

Brown (+) L1   White (1 N.C.)

Black (1 N.O.)   Gray (Common)

Blue (−) L2

① ② ⑤ ④ ③

M12X1

0.57"
(14.48)   Ref.

1.5"
(38.1)   Ref.

Allen-Bradley

Product Operation

1. When the power LED is lit, the touch button is ready for operation.

2. To send an output, simply place palm or fingers onto ergonomically contoured surface, covering both raised sensor pads (see Figure 1).

3. Safety/redundancy has been incorporated by requiring both sensors to be touched within 0.2 seconds of each other, otherwise the device will not send an output.

4. The SPST (SPST - N.O. + SPST N.C.) electromechanical relay stays activated as long as both pads remain touched.

2 Independent Sensor Surfaces

Power LED
Run/Fault LED
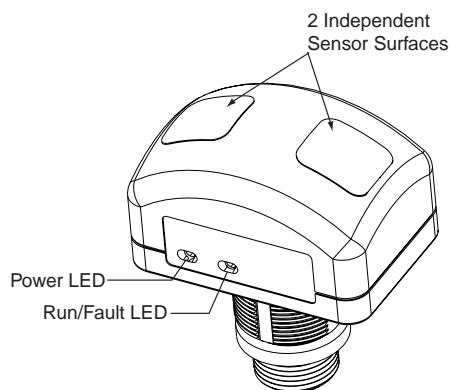
Figure 1

Diagnostics

Code 2:
If the device is being touched during power up, the Fault LED will flash a code, and the microprocessor will disable the output. The device will resume operation 10 seconds after it is no longer being touched.

Code 3:
If an object, such as a wet rag, touches the device during operation, and remains in contact with the device after the operator removes their hand, the Fault LED will flash a code, and the device will be disabled until the object is removed.

Code 4:
Even if conductive films deposit on the sensor surface over time, a false output will NOT be triggered. The Fault LED will flash a code, and the device will be disabled until the sensor surface is cleaned.

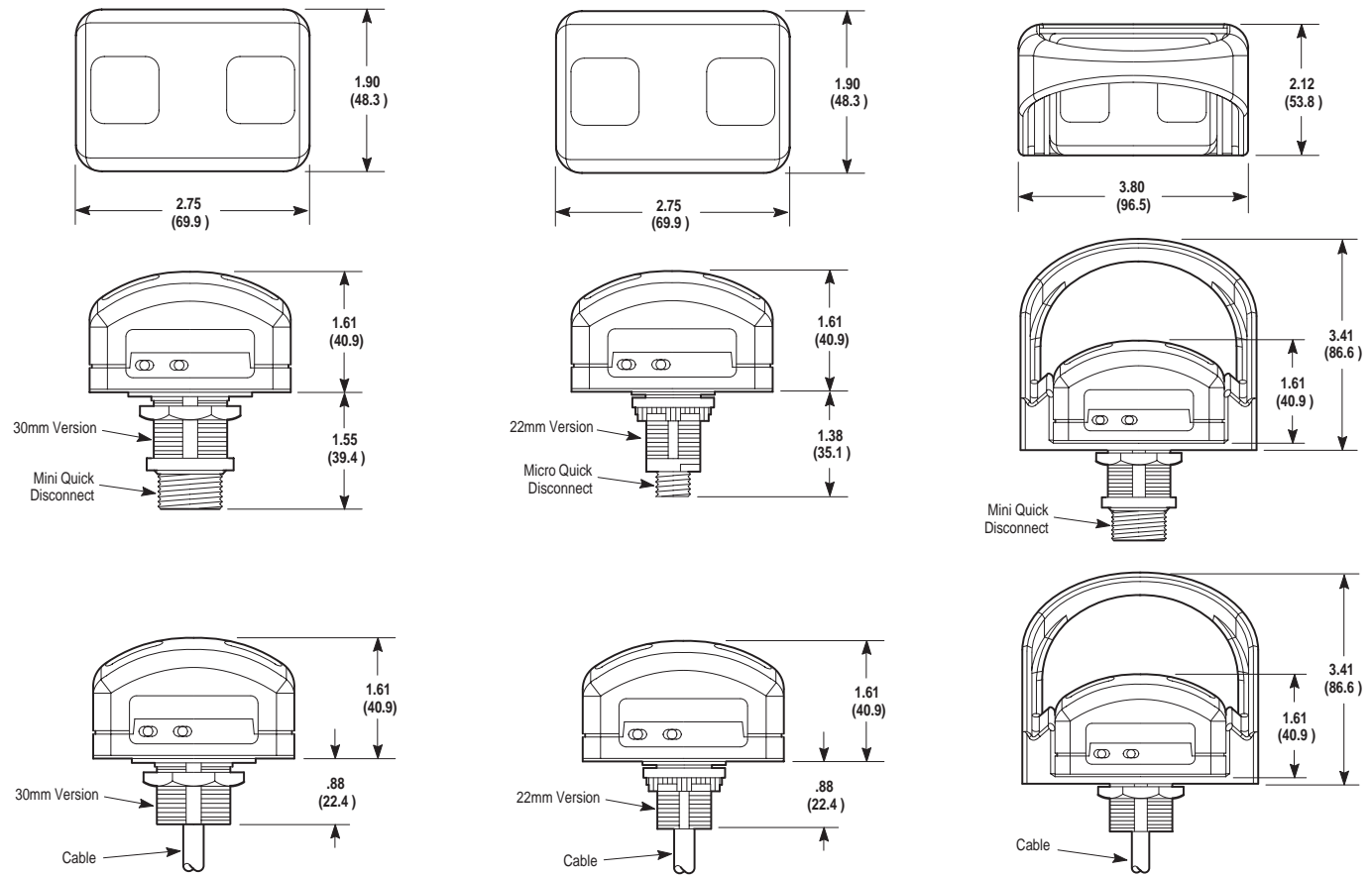| Code Type	Description	Fault LED Flash Sequence
Code 2	Power Interruption Safety	●● ●● ●●
Code 3	Tie Down Protection	●●● ●●● ●●●
Code 4	Margin Detection	●●●● ●●●● ●●●●

Zero-Force™ Touch Buttons
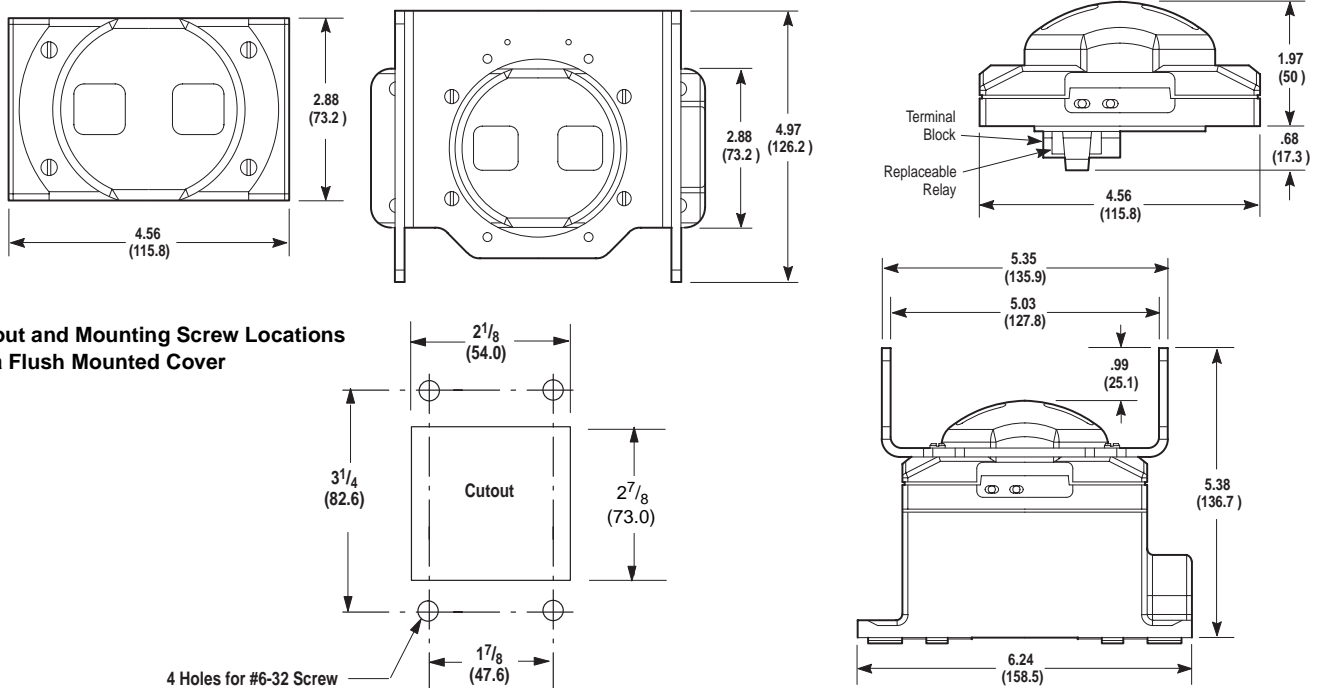**Type 4/4X/13, IP66**

Approximate Dimensions

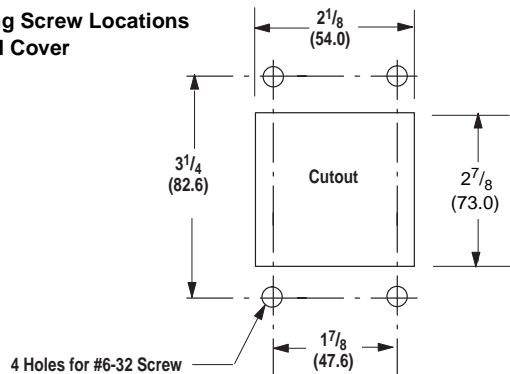Dimensions in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

General Purpose Line

1.90
(48.3)

2.75
(69.9)

1.90
(48.3)

2.75
(69.9)

2.12
(53.8)

3.80
(96.5)

1.61
(40.9)

30mm Version

Mini Quick Disconnect

1.55
(39.4)

1.61
(40.9)

22mm Version

Micro Quick Disconnect

1.38
(35.1)

3.41
(86.6)

1.61
(40.9)

Mini Quick Disconnect

1.61
(40.9)

30mm Version

Cable

.88
(22.4)

1.61
(40.9)

22mm Version

Cable

.88
(22.4)

3.41
(86.6)

1.61
(40.9)

Cable

Heavy Industrial Line

2.88
(73.2)

4.56
(115.8)

2.88
(73.2)

4.97
(126.2)

Terminal Block

Replaceable Relay

1.97
(50)

.68
(17.3)

4.56
(115.8)

Cutout and Mounting Screw Locations for a Flush Mounted Cover

$2^1/_8$
(54.0)

$3^1/_4$
(82.6)

Cutout

$2^7/_8$
(73.0)

4 Holes for #6-32 Screw

$1^7/_8$
(47.6)

5.35
(135.9)

5.03
(127.8)

.99
(25.1)

5.38
(136.7)

6.24
(158.5)

Allen-Bradley

Zero-Force is a trademark of Rockwell Automation.